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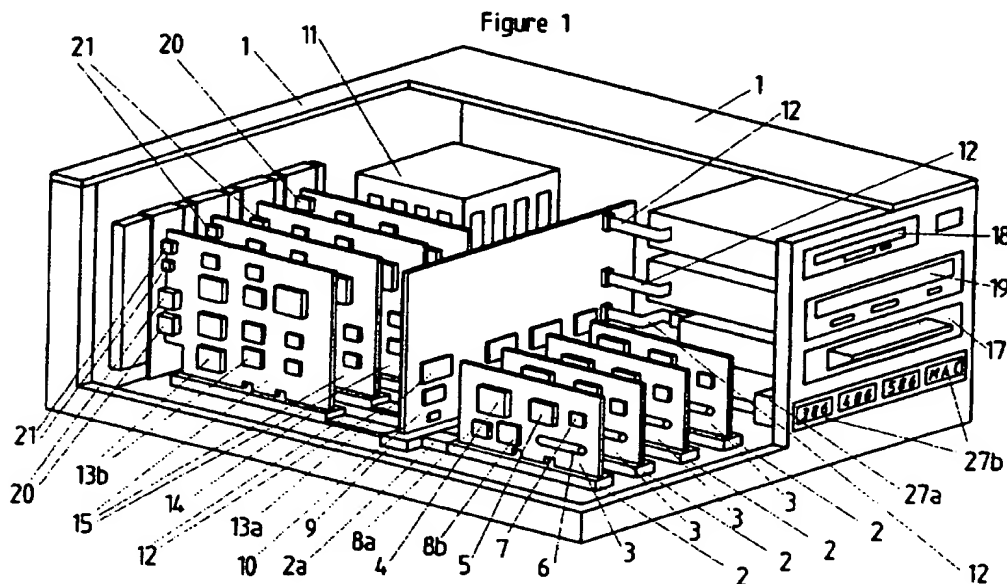
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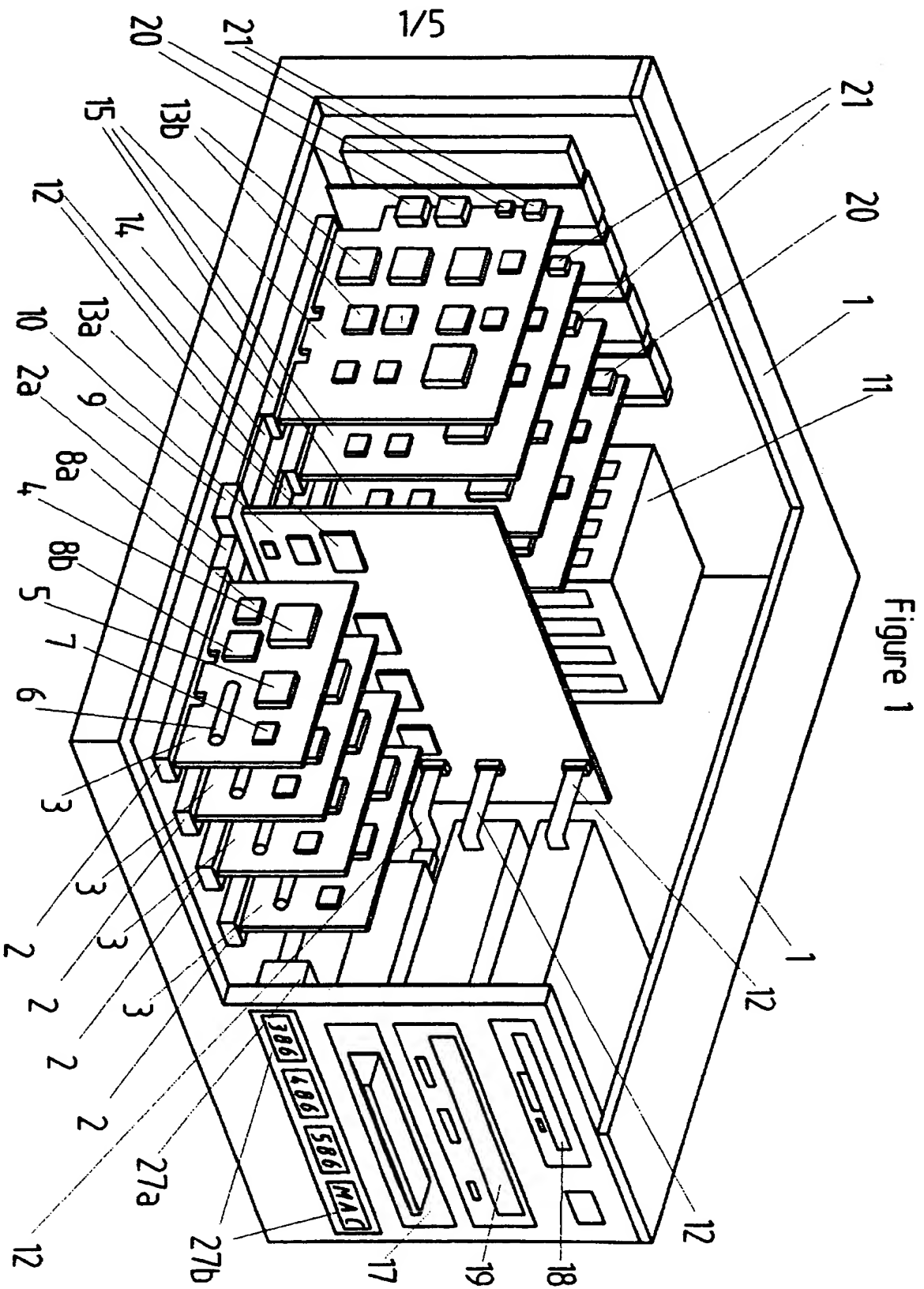
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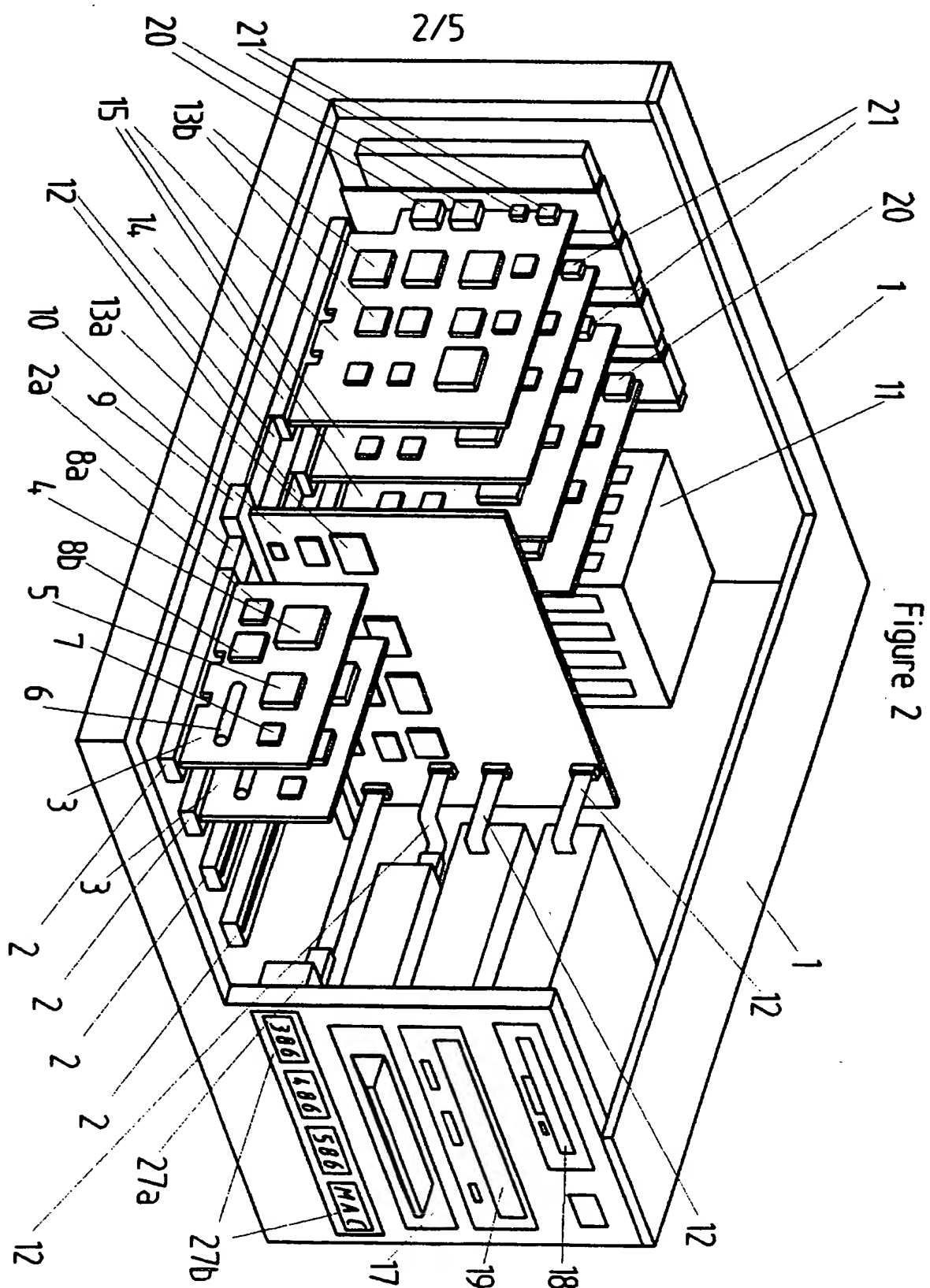
(54) Multi-compatible computer with slot-in mother-cards

(57) A Multi-Compatible Personal Computer configured to load and run any one of a plurality of incompatible Operating Systems and associated compatible Software Applications, comprises a Computer cabinet, 1, containing a plurality of dedicated modular Slot-in Card Connectors, 2, each for receiving a dedicated slot-in Mother Card, 3, compatible with one of the Operating Systems, and containing its own dedicated CPU, 4, ROM BIOS, 5, battery, 6, clock, 7, RAM's, 8a, and Co-processor, 8b, which are connected via slot-in Switching Interface Card, 10, to a host of communal internal and external components, deuces and peripherals, typically Power Supply Unit, 11, Buses, 12, Bus Controllers, 13a and 13b, Expansion Slots, 14, Expansion Cards, 15, DRAM's, Hard Disk Drives, 17, Floppy Disc Drive, 18, CD ROM Drive, 19, Ports, 20, and Plug-in connector sockets, 21, for external peripherals typically Keyboard, Monitor, Mouse, Modem, and Printer.



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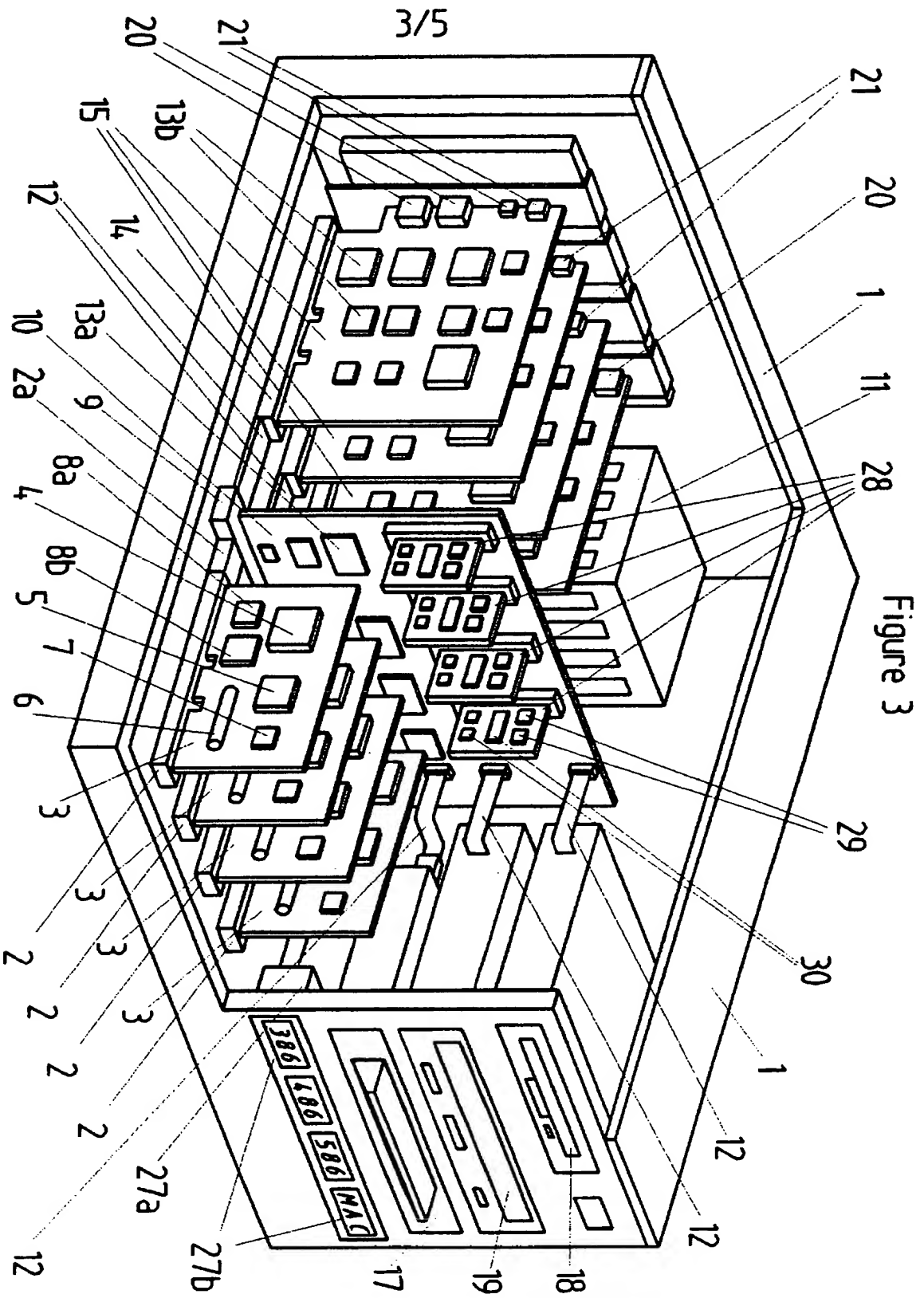
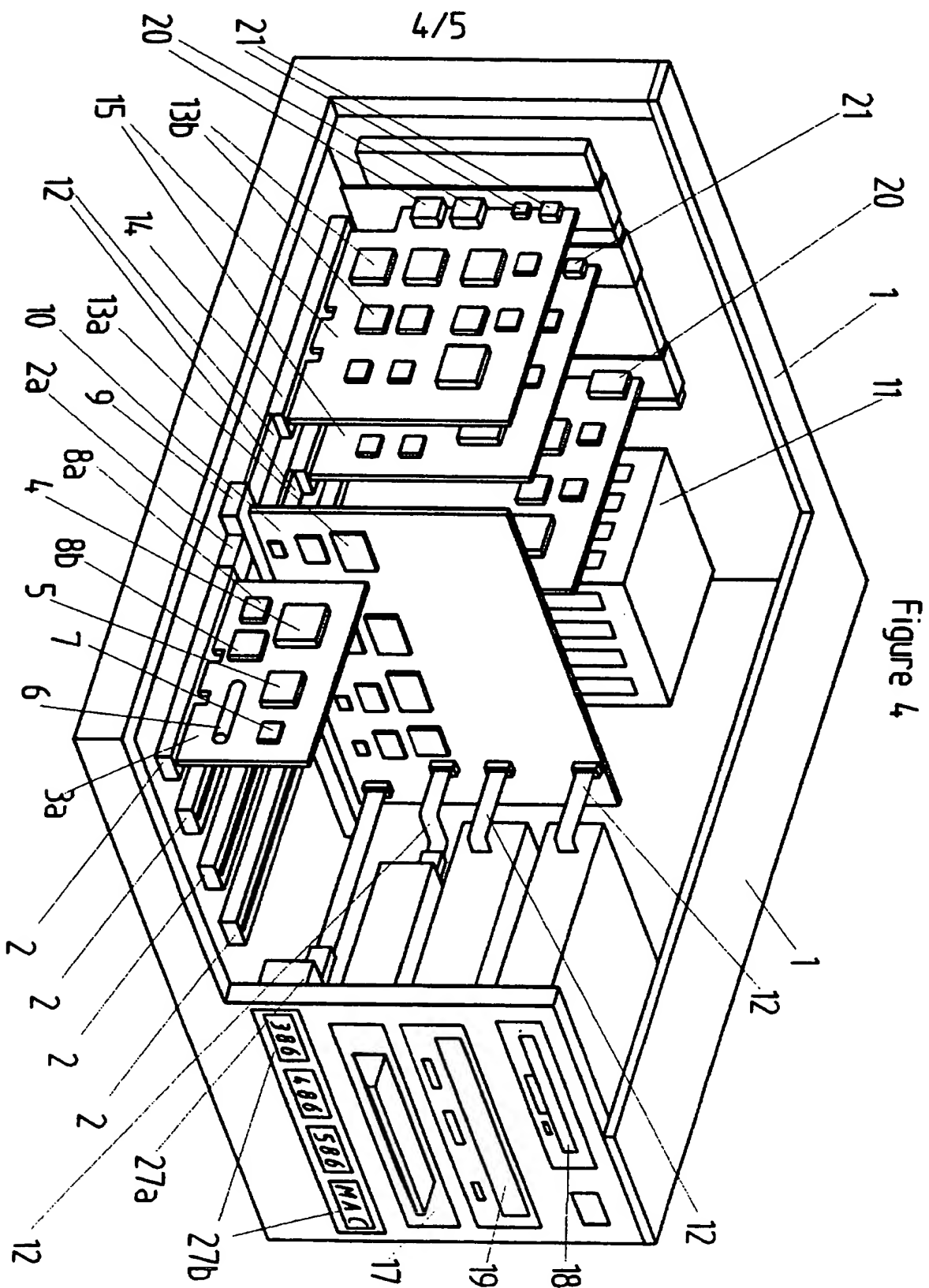


Figure 3

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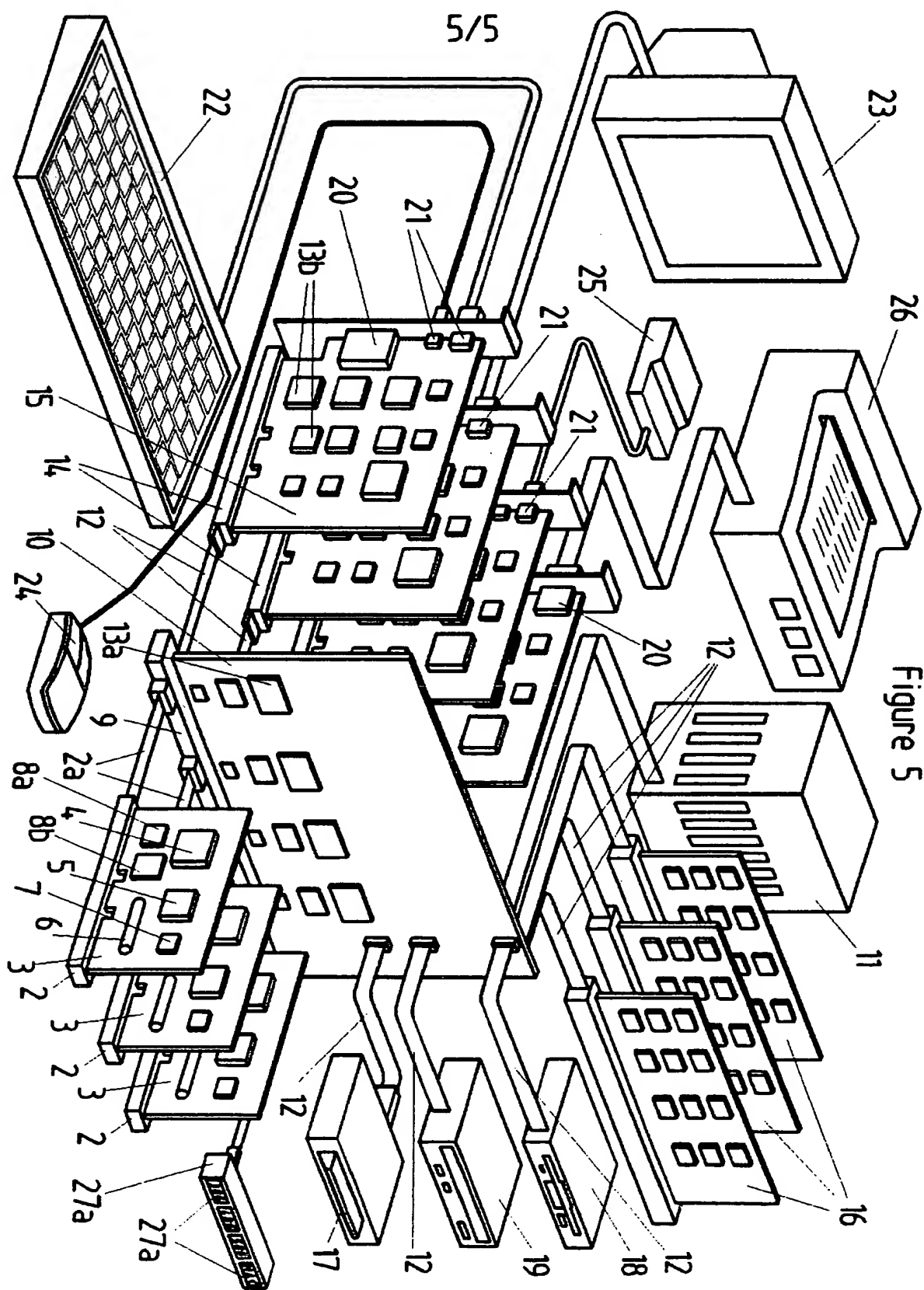


Figure 5

MULTI-COMPATIBLE COMPUTERTECHNOLOGY FIELD

The Intellectual Property covered by this Patent relates to Computer Technology, and more particularly, to Multi-Compatible Personal Computers, capable of loading and running a plurality of Incompatible Operating Systems, Software Applications, and Incompatible downgrades at maximum speed, for a minimum cost and inconvenience to consumers, as well as providing for upgrades in Microprocessors, System Architecture and Operating Systems.

FUTURE PREDICTIONS

It is anticipated that the unlimited flexibility of the novel dedicated slot-in multiple Mother Card technology covered by this patent, will create the Industry Standard for mass produced "Multi-Compatible Computers" with a high demand for Manufacturing Licenses. The technology makes full use of the "Economies of Scale" and the best buys from Vendors of Computer Software, Hardware, and Peripherals - a market already running into Billions of Dollars.

STATE OF THE ART - BACKGROUND - DRAWBACKS

Even though Desk Top Computers have recently improved considerably, become more "user friendly", faster, smaller and cheaper, there are nevertheless some serious drawbacks in the present state of the art, which are listed below:-

a) Incompatible Operating Systems & Applications: During the current decade, many different Desktop Computers have become available, together with numerous Operating Systems, including MS DOS, Apple Mac, OS/2, Amiga, CPM, UNIX and Atari with a good choice of compatible Software Applications. Not all these Operating Systems or Applications can be installed on any one Desktop Computer. This is primarily because the protocols and format codes of the Central Processing Unit, ROM BIOS and other essential local architecture on the Computer's "Motherboard" are not compatible. Yet most of these incompatible Computers, Operating Systems and applications are quite compatible with and use the same internal and external peripherals including Disc Drives, Printers, Monitors and Mice.

b) Downwardly Incompatible: Within every computer system, fresh Upgrades of Operating Systems, Microprocessors, System Architecture and Software Applications are continuously being released, without always catering for Downgrades. Often Upgrades are downwardly incompatible. For example, CAD and Animation software compatible with 386 computers do not work on 486 computers, consequently,

consumers need to retain their old 386 computers. Also application upgrades to match new faster computers can either be prohibitively expensive or impossible to obtain, if the vendor has stopped trading.

- 5 c) Limited Choice: The "Best Buys" in Software Applications are not confined to any one Operating System or computer. Even MS DOS, the most popular Operating System has a base memory limitation of only 640K. Most Consumers have a limited budget and desk space, which limits them to one Computer and one Operating System.
- 10 d) Duplication: If more than one Incompatible Operating System, or downwardly incompatible application is required, it is necessary to have a multiplicity of Computers complete with a duplication of common components, devices and peripherals, such as power supplies, keyboards, Disk Drives, Printers, Monitors and mice.
- 15 This duplication is wasteful, especially as most of the incompatible mass produced Personal Computers now use identical common internal and external Components, Devices and Peripherals.

#### OBJECT.

- 20 The object of the present invention is to overcome the above wasteful duplication of Components, Devices and Peripherals due to incompatibility in the present state of the art, by providing a Multi-Compatible Personal Computer, capable of loading and running a plurality of Incompatible Operating Systems, Software Applications and Incompatible Downgrades, at maximum speed, without duplication of common internal and external
- 25 Components, Devices and Peripherals, thus reducing Consumer costs and inconvenience.

- 30 ESSENTIAL TECHNICAL FEATURES: Briefly, this is achieved in the present invention by providing a Personal Computer embodying a plurality of slot-in Mother Cards, each having its own CPU and other essential Mother Card system architecture, together with Switching Interface means to connect up the Common internal and external Components, Devices and Peripherals to the Mother Card selected.

- 35 DATA SHARING. A further object of the present invention is to provide slot-in Daughter Cards to enable Data processed on one Mother Card to be shared and translated for processing by another Mother Card.

LOW COST PC It is a further object of the present invention to provide a low cost Personal Computer with just one slot-in Mother Card, with provision for adding more slot-in Mother Cards as and when desired, available and affordable.



**PRIOR ART - NO ANTICIPATIONS**

There are no anticipations of the specific technology covered by the claims of this patent. However, for the record, mention shall be made of some unsatisfactory means presently available of "Dual Compatible Operating System Computers", in order to point out their essential differences with the present invention:-

a) **Software Emulation** of MS DOS is one technology used on Apple MAC Computers to allow MS DOS compatible software applications to be loaded and run on Dedicated MAC Computers. The big disadvantage of Software Emulation is "Emulation Ratio", i.e. the number of additional instructions required to run the MS DOS based application. This ratio varies from 3 to 10, which means that applications may be slowed down by 3 to 10 times. Emulation is not the technology used in the present invention.

b) **Plug-in Motherboard in NuBUS Slots** of Apple Mac computers is another unsatisfactory means of allowing MS DOS applications to be loaded and run on Apple Mac Computers, however, there is so much duplication of some communal components that cost is three times that of a Mass Produced IBM compatible P.C. - and hence "Not Cost Effective". Performance is also impaired due to compromising the dedicated Host Mac system resulting in similar "Emulation Ratio" disadvantages as "Software Emulation".

In the present invention there is no dedicated Host System to compromise the performance of other systems, because each slot-in Mother Card selected is switch interface connected directly to the Communal Components, Devices and Peripherals to obtain Maximum Speed.

**REFERENCE TO DRAWINGS**

A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawings, in which:-

- 5     **Figure 1**    is a perspective cut-away illustration of a typical Multi Compatible Computer revealing the essential features, with four slot-in Mother Cards installed, each having its own different Microprocessor and essential Motherboard components.
- 10    **Figure 2**    is a perspective cut-away illustration, of the same computer with only two slot-in Mother Cards installed with provision for installing additional Mother Cards.
- 15    **Figure 3**    is a perspective cut-away illustration, of a Multi-Compatible Computer embodying four Daughter Cards installed on the switching interface card enabling data sharing across Mother Cards.
- 20    **Figure 4**    is a perspective cut-away illustration, of a typical low cost Multi-Compatible Computer with only one slot-in Mother Card installed, and only three expansion cards, with provision for installing additional Mother Cards and expansion cards.
- 25    **Figure 5**    is a typical exploded perspective schematic diagram of this invention, showing the routing of connections via the slot-in Switching Interface Card between the Mother Cards and the communal internal and external components, devices and peripherals.

**DESCRIPTION**

- Referring to the drawings, there is provided a Multi-Compatible Personal Computer with "slot-in Mother Cards" configured to load and run any one of a plurality of incompatible specific Operating Systems and associated compatible Software Applications, comprising
- 5 a Computer cabinet, 1, containing a plurality of dedicated modular Slot-in Card Connectors, 2, each having a dedicated slot-in Mother Card, 3, each Mother Card, 3, compatible with one of the specific Incompatible Operating Systems, and having its own Motherboard components, circuitry and essential local System Architecture, including
  - 10 typically a Central Processing Unit, 4, ROM BIOS, 5, battery, 6, clock, 7, RAM's, 8a, and Co-processor, 8b. The Slot-in Card Connectors, 2, are connected, 2a, to a Switching Interface Slot, 9, having a slot-in Switching Interface Card, 10, configured to connect and disconnect as and when desired, any one of the Mother Cards, 3, to a host of communal internal and external components, devices and peripherals required by and common to the
  - 15 Mother Cards, 3, including typically a Power Supply Unit, 11, Buses, 12, Bus Controllers, 13a and 13b, Expansion Slots, 14, Expansion Cards, 15, DRAM's, 16 (figure 5), Hard Disk Drives, 17, a Floppy Disc Drive, 18, a CD ROM Drive, 19, Ports, 20, and Plug-in connector sockets, 21, for connecting up to external peripherals (see figure 5) including typically a Keyboard, 22, Monitor, 23, Mouse, 24, Modem, 25, and Printer, 26.
  - 20
- Preferably the Multi-Compatible Computer is provided with a "Mother Card Selected" display means, 27a and 27b, to display the Mother Card selected, configured to enable selection via the keyboard, 22 (figure 5).
- 25 Preferably the Mother Card selected display means, 27a, includes an LED indicating light caption and symbol display and/or, an illuminated caption and symbol display panel, 27b, and/or on-screen monitor display means configured and wired to display the Mother Card selected.
  - 30 Preferably a selection default means is provided when "booting up", configured to ensure that when the Computer is switched on, in the absence of a new selection, automatic default selection of one of the Mother Cards installed is made, pre-selected by the user.
- Additionally (figure 3), slot-in data sharing Daughter Cards, 28, are provided, embodying
- 35 buffer-switching interface architecture, 29, to enable data processed on one Mother Card to be shared and translated for processing on another Mother Card.

Additionally (figure 3), the data sharing Daughter Cards, 28, are provided with buffer/switching interface architecture, 30, configured to provide for split screen display and/or separate monitor display of the data sharing/data processing applications.

- 5 As a low cost option (figure 4), a Multi-Compatible Computer is provided having only one slot-in Mother Card, 3a, installed, with slot-in connectors, 2, and switching interface, 10, provision for adding additional Mother Cards, as and when desired, available and affordable.

**CLAIMS:**

1. A Multi-Compatible Personal Computer with "slot-in Mother Cards" configured to load and run any one of a plurality of incompatible specific Operating Systems and associated compatible Software Applications, comprising a Computer cabinet containing a plurality of dedicated modular Slot-in Card Connectors, each having a dedicated slot-in Mother Card, each Mother Card compatible with one of said specific Operating Systems and having its own Motherboard components, circuitry and essential local system architecture, including a Central Processing Unit, ROM BIOS, battery, clock, RAMs, and Co-processors, said Slot-in Card Connectors connected to a Slot-in Switching Interface Connector having a Switching Interface Card, configured to connect and disconnect, as and when desired, any one of said Mother Cards to a host of communal internal and external components, devices and peripherals, said communal components, devices and peripherals, including typically Power Supply Units, Buses, Bus Controllers, Expansion Slots, Expansion Cards, DRAM's Hard Disk Drive, Floppy Disc Drives, C.D. Drives, Ports and plug-in connector sockets for connecting up to external peripherals, including typically a Keyboard, Monitor, Mouse, Modem, Printer and other optional computer peripherals.
2. A Multi-Compatible Personal Computer with slot-in Mother Cards as in claim 1, characterised in that said Switching Interface Card is connected to and provided with a "Mother Card Selected" display means to display the Mother Card selected.
3. A Multi-Compatible Personal Computer with slot-in Mother Cards as in any one or more of the preceding claims, characterised in that said Switching Interface Card is configured to enable Mother Card selection via said keyboard.
4. A Multi-Compatible Personal Computer with slot-in Mother Cards as in any one or more of the preceding claims, characterised in that said display means includes an LED indicating light caption and symbol display means, and/or an illuminated caption and symbol display panel means, and/or an on-screen monitor display means configured and wired to display the Mother Card selected.
5. A Multi-Compatible Personal Computer with slot-in Mother Cards as in any one or more of the preceding claims, characterised in that a selection default software means is provided, configured to ensure that when the Computer is switched on and "booting up", in the absence of a new selection, automatic default selection of one of said Mother Card installed is made, pre-selected by the user.

6. A Multi-Compatible Personal Computer with slot-in Mother Cards as in any one or more of the preceding claims, characterised in that Data Sharing Daughter Cards are provided containing buffer/switching interface architecture to enable data processed on one Mother Card to be shared and translated for processing on another Mother Card.

5

7. A Multi-Compatible Personal Computer with slot-in Mother Cards as in any one or more of the preceding claims, characterised in that said Data Sharing Daughter Cards are provided with buffer/switching interface architecture configured to provide for a split screen display and/or a separate monitor display of the data sharing/data processing applications.

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8. A Multi-Compatible Personal Computer with slot-in Mother Cards as in any one or more of the preceding claims, characterised in that only one slot-in Mother Card is installed, with said slot-in connectors and Switching Interface provision for adding additional Mother Cards, as and when desired, available and affordable.

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9. A Multi-Compatible Personal Computer with slot-in Mother Cards substantially characterised and described herein and with reference to the accompanying drawings.

**Patents Act 1977****Examiner's report to the Comptroller under Section 17  
(The Search report)**

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Application number  
GB 9416896.0**Relevant Technical Fields**

- (i) UK Cl (Ed.M)      G4A (ADT, AFP)  
(ii) Int Cl (Ed.5)      G06F (1/16, 1/18, 9/46, 15/16)

Search Examiner  
B G WESTERNDate of completion of Search  
29 SEPTEMBER 1994**Databases (see below)**

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

Documents considered relevant following a search in respect of Claims :-  
1-9

(ii) ONLINE DATABASES: WPI, COMPUTER DATABASE

**Categories of documents**

- X:** Document indicating lack of novelty or of inventive step.      **P:** Document published on or after the declared priority date but before the filing date of the present application.
- Y:** Document indicating lack of inventive step if combined with one or more other documents of the same category.      **E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.
- A:** Document indicating technological background and/or state of the art.      **&:** Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages	Relevant to claim(s)
A	GB 2271446 A      (HANY NEOMAN) see whole document	
A	Dialog abstract 00652175 & InfoWorld, Vol 7, Issue 44, 7 October 1985, page 18	

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